General

Guideline Title

American Gastroenterological Association medical position statement on the management of Barrett's esophagus.

Bibliographic Source(s)

American Gastroenterological Association, Spechler SJ, Sharma P, Souza RF, Inadomi JM, Shaheen NJ. American Gastroenterological Association medical position statement on the management of Barrett's esophagus. Gastroenterology. 2011 Mar;140(3):1084-91. [3 references] PubMed

Guideline Status

This is the current release of the guideline.

Recommendations

Major Recommendations

Definitions for the strength of recommendation (strong, weak) and quality of evidence (high, moderate, low) are provided at the end of the "Major Recommendations" field.

Barrett's Esophagus Risk and Screening

In patients with multiple risk factors associated with esophageal adenocarcinoma (age 50 years or older, male sex, white race, chronic gastroesophageal reflux disease [GERD], hiatal hernia, elevated body mass index, and intra-abdominal distribution of body fat), the guideline developers suggest screening for Barrett's esophagus (weak recommendation, moderate-quality evidence).

The guideline developers recommend against screening the general population with GERD for Barrett's esophagus (strong recommendation, low-quality evidence).

Risk of Progression in Barrett's Esophagus

The diagnosis of dysplasia in Barrett's esophagus should be confirmed by at least one additional pathologist, preferably one who is an expert in esophageal histopathology (strong recommendation, moderate-quality evidence).

Endoscopic Surveillance in Patients With Barrett's Esophagus

The guideline developers suggest that endoscopic surveillance be performed in patients with Barrett's esophagus (weak recommendation, moderate-quality evidence).

The guideline developers suggest the following surveillance intervals (weak recommendation, low-quality evidence):

- No dysplasia: 3–5 years
- Low-grade dysplasia: 6–12 months
- High-grade dysplasia in the absence of eradication therapy: 3 months

Biomarkers in the Management of Barrett's Esophagus

The guideline developers suggest against the use of molecular biomarkers to confirm the histologic diagnosis of dysplasia or as a method of risk stratification for patients with Barrett's esophagus at this time (weak recommendation, low-quality evidence).

Biopsy Protocol for Endoscopic Surveillance of Barrett's Esophagus

For patients with Barrett's esophagus who are undergoing surveillance, the guideline developers recommend:

- Endoscopic evaluation be performed using white light endoscopy (strong recommendation, moderate-quality evidence).
- 4-quadrant biopsy specimens be taken every 2 cm (strong recommendation, moderate-quality evidence).
- Specific biopsy specimens of any mucosal irregularities be submitted separately to the pathologist (strong recommendation, moderate-quality evidence).
- 4-quadrant biopsy specimens be obtained every 1 cm in patients with known or suspected dysplasia (strong recommendation, moderate-quality evidence).

The guideline developers suggest against requiring chromoendoscopy or advanced imaging techniques for the routine surveillance of patients with Barrett's esophagus at this time (weak recommendation, low-quality evidence).

Prevention of Cancer in Barrett's Esophagus

The guideline developers recommend against attempts to eliminate esophageal acid exposure (proton pump inhibitors [PPIs] in doses greater than once daily, esophageal pH monitoring to titrate PPI dosing, or antireflux surgery) for the prevention of esophageal adenocarcinoma (strong recommendation, moderate-quality evidence).

The guideline developers recommend screening patients to identify cardiovascular risk factors for which aspirin therapy is indicated (strong recommendation, high-quality evidence).

The guideline developers suggest against the use of aspirin solely to prevent esophageal adenocarcinoma in the absence of other indications (weak recommendation, moderate-quality evidence).

The Role of Endoscopic Therapy in Patients With Barrett's Esophagus

The guideline developers recommend endoscopic eradication therapy with radiofrequency ablation (RFA), photodynamic therapy (PDT), or endoscopic mucosal resection (EMR) rather than surveillance for treatment of patients with confirmed high-grade dysplasia within Barrett's esophagus (strong recommendation, moderate-quality evidence).

The guideline developers recommend EMR for patients who have dysplasia in Barrett's esophagus associated with a visible mucosal irregularity to determine the T stage of the neoplasia (strong recommendation, moderate-quality evidence).

Definitions:

Strength of Recommendation

Strength of Recommendation	Clinical Implication	Policy Implication
Strong	"Do it" or "Don't do it"	Adherence to this recommendation could be used as a quality or performance measure
Weak	"Probably do it" or "Probably don't do it"	Recommendation not suitable for quality or performance measure

Quality of Evidence

Quality of Evidence	Estimate of Certainty of Effect
High	Further research is very unlikely to change the estimate of effect
Moderate	Further research is likely to have an important impact and may change the estimate of effect
Low	Further research is very likely to have an important impact and is likely to change the estimate of effect
Very low	Any estimate of effect is uncertain

Note: The quality of evidence was ranked in accordance with the Grading of Recommendations Assessment, Development and Evaluation (GRADE) criteria.

Clinical Algorithm(s)

None provided

Scope

Disease/Condition(s)

Barrett's esophagus

Guideline Category

Diagnosis

Evaluation

Management

Prevention

Risk Assessment

Screening

Treatment

Clinical Specialty

Gastroenterology

Oncology

Pathology

Preventive Medicine

Radiology

Surgery

Intended Users

Health Care Providers

Physicians

Guideline Objective(s)

- To identify the risk factors associated with development of esophageal adenocarcinoma
- To determine who should undergo surveillance after being diagnosed with Barrett's esophagus
- To assess the role of endoscopic therapy for patients with Barrett's esophagus
- To improve the quality of health care by integrating the best research evidence with clinical expertise and patient values

Target Population

Adults with Barrett's esophagus

Note: General issues related to the management of gastroesophageal reflux disease (GERD), which often accompanies Barrett's esophagus, have been discussed in an earlier American Gastroesophageal Association (AGA) medical position statement and are not considered here.

Interventions and Practices Considered

1. Risk assessment for Barrett's esophagus
2. Screening of high-risk patients
3. Confirmation of dysplastic pathology
4. Endoscopic surveillance
5. Biopsy
6. Screening for cardiovascular disease risk factors for which aspirin therapy is indicated
7. Chromoendoscopy or advanced imaging (not recommended for routine surveillance)
8. Endoscopic eradication therapy with radiofrequency ablation (RFA), photodynamic therapy (PDT), or endoscopic mucosal resection (EMR) for confirmed high-grade dysplasia
9. Staging of neoplasia by EMR

Note: The following practices were considered but not recommended:

Biomarker measurements for surveillance and risk assessment
Attempts to eliminate esophageal acid exposure (proton pump inhibitors [PPIs] in doses greater than once daily, esophageal pH monitoring to titrate PPI dosing, or antireflux surgery)
Aspirin solely as a preventative for esophageal adenocarcinoma

Major Outcomes Considered

- Incidence of progression to high-grade dysplasia and esophageal adenocarcinoma
- Accuracy of histopathologic identification
- Reduction in mortality
- Quality of life
- Cost-effectiveness of screening
- Interobserver variability in screening techniques
- Eradication of high-grade dysplasia and intramucosal carcinoma

Methodology

Methods Used to Collect/Select the Evidence

Searches of Electronic Databases

Description of Methods Used to Collect/Select the Evidence

Several broad questions were developed by interaction among the authors, the American Gastroenterological Association Institute (AGAI), the Clinical Practice and Quality Management Committee (CPQMC), and representatives from the AGAI Council. The questions were designed to encapsulate the major management issues leading to consultations for Barrett's esophagus and esophageal adenocarcinoma in clinical practice in 2010:

1. What landmark identifies the gastroesophageal junction? What epithelial type is required for the diagnosis of Barrett's esophagus? What is the definition of Barrett's esophagus? Should endoscopists measure the extent of Barrett's metaplasia?
2. What is the risk of esophageal cancer for the general population of patients with Barrett's esophagus?
3. Does Barrett's esophagus affect life expectancy? How does a diagnosis of Barrett's esophagus affect quality of life?
4. Who is at risk for Barrett's esophagus? Who should be screened for Barrett's esophagus?
5. What is the natural history of dysplasia in Barrett's esophagus?
6. Does endoscopic surveillance improve survival for patients with Barrett's esophagus?
7. Can biomarkers be used to confirm the histologic diagnosis of dysplasia? Can biomarkers be used instead of dysplasia for risk stratification in Barrett's esophagus?
8. Should chromoendoscopy or "electronic chromoendoscopy" be used to enhance the detection of metaplasia and dysplasia in Barrett's esophagus?
9. Should advanced endoscopic imaging techniques such as autofluorescence imaging, confocal laser endomicroscopy, diffuse reflectance and light scattering spectroscopy, and optical coherence tomography be used to enhance the detection of metaplasia and dysplasia in Barrett's esophagus?
10. Should proton pump inhibitors be used for chemoprevention in Barrett's esophagus? Should nonsteroidal anti-inflammatory drugs be used for chemoprevention in Barrett's esophagus?
11. Should antireflux surgery be advised to prevent cancer in Barrett's esophagus?
12. What is the role for endoscopic mucosal resection (EMR) in Barrett's esophagus? Should endoscopic eradication be used to treat patients who have Barrett's esophagus without dysplasia? Should endoscopic eradication be used to treat patients who have Barrett's esophagus with low-grade dysplasia? Should endoscopic eradication be used to treat patients who have Barrett's esophagus with high-grade dysplasia or intramucosal carcinoma?
13. Is esophagectomy still a reasonable option for patients who have high-grade dysplasia in Barrett's esophagus?

The databases searched included PubMed/Medline and EMBASE, limited to English literature and initially conducted 6/2009 but updated after the initial review using the same search criteria on 6/2010.

For each of the specific questions raised by the CPQMC, authors conducted an independent systematic review of the literature using published guidelines (PRISMA). Articles selected for inclusion in the Technical Report (TR) were based on a priori inclusion and exclusion criteria agreed on by all authors.

Please see the appendix "Search Algorithms Used in Systematic Review" in the supporting technical review (see the "Companion Documents" field) for the inclusion/exclusion criteria and search terms.

Number of Source Documents

Not stated

Methods Used to Assess the Quality and Strength of the Evidence

Weighting According to a Rating Scheme (Scheme Given)

Rating Scheme for the Strength of the Evidence

Quality of Evidence

Quality of Evidence	Estimate of Certainty of Effect
High	Further research is very unlikely to change the estimate of effect
Moderate	Further research is likely to have an important impact and may change the estimate of effect
Low	Further research is very likely to have an important impact and is likely to change the estimate of effect
Very low	Any estimate of effect is uncertain

Note: The quality of evidence was ranked in accordance with the Grading of Recommendations Assessment, Development and Evaluation (GRADE) criteria.

Methods Used to Analyze the Evidence

Review of Published Meta-Analyses

Systematic Review

Description of the Methods Used to Analyze the Evidence

Data extraction is shared among Technical Review (TR) (see the "Availability of Companion Documents" field) authors, and the individual study and summary results are reviewed and approved by all authors. The search terms for each topic included in the TR are included in the Appendix to the TR. It is not the function of the TR to provide a summary estimate for each variable included in the review. For this reason, results are summarized in the text of the TR and not subjected to a formal meta-analysis. The draft TR is compiled by the lead author and approved by all authors before submission for publication.

Methods Used to Formulate the Recommendations

Expert Consensus

Description of Methods Used to Formulate the Recommendations

The guideline developers considered a series of broad questions on the diagnosis, key clinical features, and management of Barrett's esophagus.

Once the technical review was completed, the authors submitted it to a medical position panel (MPP), which then developed the medical position statement. The MPP was composed of the authors of the technical review, gastroenterologists from a variety of community practice settings, a pathologist, a gastrointestinal surgeon whose area of expertise includes Barrett's esophagus, an author of the American Gastroenterological Association (AGA) technical review on the management of gastroesophageal reflux disease (GERD), a health plan representative, and a patient with Barrett's esophagus.

The MPP ranked the strength of each recommendation based on the quality of evidence for each of its original recommendations after considering the quality of evidence for a specific question and the "net health benefit," that is, the difference between estimated benefits and the risks of the intervention. The Grading of Recommendations Assessment, Development and Evaluation (GRADE) process was used to assess the strength of recommendations, as outlined in a previously published AGA document.

A strong recommendation implies that benefits outweigh risks for most patients. A weak recommendation implies that benefits, risks, and the burden of the intervention are more closely balanced. When a clear recommendation was not possible based on scientific evidence but rational clinicians and patients might opt for different management choices, a weak recommendation was assigned.

Rating Scheme for the Strength of the Recommendations

Strength of Recommendation

Strength of Recommendation	Clinical Implication	Policy Implication
Strong	"Do it" or "Don't do it"	Adherence to this recommendation could be used as a quality or performance measure
Weak	"Probably do it" or "Probably don't do it"	Recommendation not suitable for quality or performance measure

Cost Analysis

- Cost-effectiveness analyses suggest that endoscopic screening may be warranted if certain predefined clinical parameters are met, but several conceptual and logistical difficulties diminish the utility of screening endoscopy as it is currently practiced in the United States. First and foremost, approximately 40% of subjects who have adenocarcinoma of the esophagus report no history of chronic gastroesophageal reflux disease (GERD) symptoms, and the number of patients with GERD compared with the number with esophageal adenocarcinoma makes screening all patients with GERD cost-ineffective.
- There are no data from controlled trials showing that endoscopic eradication therapy, including radiofrequency ablation (RFA) and cryotherapy, is more effective at reducing cancer risk or more cost-effective than long-term endoscopic surveillance in patients with Barrett's esophagus in the absence of dysplasia (nondysplastic Barrett's metaplasia).

Method of Guideline Validation

Internal Peer Review

Description of Method of Guideline Validation

Once the medical position panel (MPP) approved the document, it was forwarded to the American Gastroenterological Association (AGA) Institute Clinical Practice and Quality Management Committee (CPQMC) for further review, comment, and modification. The CPQMC met on September 24, 2010, and reviewed the recommendations of the MPP. The final committee-approved medical position statement then was forwarded to the AGA Institute Governing Board, where endorsement was decided by majority vote of the board.

Evidence Supporting the Recommendations

Type of Evidence Supporting the Recommendations

The type of supporting evidence is provided for each recommendation (see the "Major Recommendations" field).

The recommendations were based primarily on a comprehensive review of published evidence (see the "Availability of Companion Documents" field). In cases where the data did not appear conclusive, recommendations were based on the consensus opinion of the group.

Benefits/Harms of Implementing the Guideline Recommendations

Potential Benefits

- Appropriate screening and treatment of Barrett's esophagus
- Prevention of progression of Barrett's esophagus to esophageal cancer

Potential Harms

A diagnosis of Barrett's esophagus causes psychological stress in many patients and may increase financial burdens due to increased life and health insurance premiums.

Qualifying Statements

Qualifying Statements

- Clinicians are aware of the importance of patient values and preferences in making clinical decisions. The medical position panel (MPP) and American Gastroenterological Association (AGA) Institute Clinical Practice and Quality Management Committee (CPQMC) recognized that fully informed patients could make different choices about medical interventions. When a clear recommendation was not possible based on scientific evidence but rational clinicians and patients might opt for different management choices, a weak recommendation was assigned. Applying this approach, high-quality evidence does not always result in strong recommendations and, conversely, strong recommendations can emerge from lower-quality evidence.
- Medical Position Statements are derived from the data available at the time of their creation and may need to be modified as new information is generated.
- Unless otherwise stated, these statements are intended for adult patients age 18 or older.
- These documents are not to be construed as standards of care. All decisions regarding the care of a patient should be made by the physician in consideration of all aspects of the patient's specific medical circumstances.

Implementation of the Guideline

Description of Implementation Strategy

An implementation plan was not provided.

Implementation Tools

Mobile Device Resources

Resources

For information about availability, see the *Availability of Companion Documents* and *Patient Resources* fields below.

Institute of Medicine (IOM) National Healthcare Quality Report Categories

IOM Care Need

Getting Better

Living with Illness

IOM Domain

Effectiveness

Patient-centeredness

Identifying Information and Availability

Bibliographic Source(s)

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Adaptation

Not applicable: The guideline was not adapted from another source.

Date Released

2011 Mar

Guideline Developer(s)

American Gastroenterological Association Institute - Medical Specialty Society

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Guideline Committee

Medical Position Panel

Composition of Group That Authored the Guideline

The American Gastroenterological Association (AGA) Institute Medical Position Panel consisted of the authors of the technical review (Stuart J. Spechler, MD, AGAF, Prateek Sharma, MD, Rhonda F. Souza, MD, AGAF, John M. Inadomi, MD, AGAF, Nicholas J. Shaheen, MD, MPH, AGAF), the chair of the Medical Position Panel (John I. Allen, MD, MBA, AGAF), the chair of the AGA Institute Practice Management and Economics Committee and the AGA Institute CPT Advisor (Joel V. Brill, MD, AGAF), a community-based gastroenterologist (Ronald E. Pruitt, MD, FACP, AGAF, FACG), an author of the AGA Institute Technical Review on the Management of Gastroesophageal Reflux Disease (Peter J. Kahrilas, MD, AGAF), a general surgeon (Jeffrey H. Peters, MD), a primary care physician (Kenneth Nix, MD), a pathologist (Elizabeth A. Montgomery, MD), a patient advocate (B. Donald Mitchell), and an insurance provider representative (John Yao, MD, MBA, MPH, MPA, Senior Medical Director, Blue Shield of California)

Financial Disclosures/Conflicts of Interest

The authors disclose the following: Dr Souza is a consultant for Takeda Pharmaceuticals and is a consultant for and receives grant support from AstraZeneca. Dr Inadomi receives grant/research support from NIH and BARRX and is a consultant for Takeda Pharmaceuticals, AstraZeneca, and Ethicon Endo-Surgery, Inc. Dr Peters receives grant/research support from Torax Medical Inc, Medigus Ltd, and Takeda Pharmaceuticals. Dr Shaheen is a consultant to NeoGenomics Labs, AstraZeneca, CSA Medical, Oncoscope, Inc, and Takeda Pharmaceuticals. He has also received research funding from AstraZeneca, BARRX Medical, Inc, Oncoscope, Inc, CSA Medical, and Takeda Pharmaceuticals. Dr Spechler

receives grant/research support from AstraZeneca, BARRX Medical, Inc, and Takeda and is a consultant for Proctor & Gamble. Dr Sharma receives grant/research support from BARRX Medical, Inc, Mauna Kea, Olympus, and Takeda Pharmaceuticals. He is also a consultant for AstraZeneca, Santarus, and Takeda Pharmaceuticals. The remaining authors disclose no conflicts.

Guideline Status

This is the current release of the guideline.

Guideline Availability

Electronic copies: Available from the Gastroenterology journal Web site .

Print copies: Available from the American Gastroenterological Association Institute, 4930 Del Ray Avenue, Bethesda, MD 20814.

Mobile versions of the guidelines are available from the American Gastroenterological Association Web site .

Availability of Companion Documents

The following are available:

- American Gastroenterological Association (AGA) Institute technical review on the management of Barrett's esophagus. Gastroenterology 2011 Oct; 140:e18-e52. Available from the Gastroenterology journal Web site .
- American Gastroenterological Association medical position statement on the management of Barrett's esophagus. Podcast. Available from the Gastroenterology journal Web site .

Patient Resources

None provided

NGC Status

This summary was completed by ECRI Institute on September 21, 2011. The information was verified by the guideline developer on December 6, 2011.

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